REMARKS/ARGUMENTS

Claims 1–37 are pending in the above-captioned application. Claims 22–31 and 37 were withdrawn. Claims 1–3, 5–21, and 32–36 have been rejected, and claim 4 has been objected to. Applicants thank the Examiner for his courtesy in discussing the instant application with the undersigned attorney during a telephone interview on June 28, 2005. The definition of the term "planar" was discussed and a decision was reached to request continued examination.

I. Rejections Under 35 U.S.C. §102

Claims 1–3, 5, 6, and 32–36 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 5,928,880 ("Wilding"). "[F]or anticipation under 35 U.S.C. § 102, a single reference must teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present." MPEP § 706.02. "The identical invention must be shown in as complete detail as is contained in the . . . claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, USPQ2d 1913, 1920 (Fed. Cir. 1989). Applicants must respectfully disagree with the Examiner's assertion that Wilding teaches every element of the rejected claims and respectfully assert that the identical invention is not shown.

Applicants' claim 1 includes the elements of a planar body structure disposed in a first plane, a first channel segment disposed in a plane parallel to the first plane, and a detection channel segment that is substantially orthogonal to the first plane. The term "planar" is defined by *Merriam-Webster's Online Dictionary, 10th Edition*, as "**1 :** of, relating to, or lying in a plane; **2 :** two-dimensional in quality." The term "plane" is defined by the same source as "**1 a :** a surface of such nature that a straight line joining two of its points lies wholly in the surface; **b :** a flat or level surface."

Referring to Applicants' FIGS. 3A and 3B, one can see that substrates 320, 322, and 324, which comprise the body structure of FIGS. 3A and 3B, are planar with regard to the plane defined by the x-axis and the z-axis. As seen in FIG. 3A and described on page 9, lines 1 and 2, first channel segment 302a is defined between substrates 320 and 322. Thus, first channel segment 302a is disposed in a plane parallel to the plane of substrates 320 and 322. Detection channel 310 can be seen to be oriented substantially orthogonal to the plane of first channel segment 302a, being parallel to the plane formed by the x-axis and the y-axis.

Applicants' claim 1 further includes the element of "a detection system ... oriented to provide a detection path substantially along a longitudinal axis of the detection channel segment." This orientation is described on page 3, lines 13–25, as having the advantage of increasing the signal level and sensitivity of an assay because the orientation provides increased detection path length and/or sample material volume. In conventional systems, the detection path is across the detection path (i.e., along a vertical axis of the detection channel segment), yielding a relatively short detection path length that is limited by the cross-sectional dimension of the detection channel. Application page 4, lines 18–28.

FIG. 6A of Wilding shows a microfluidic device or "chip" 10 sitting inside an analytical instrument 50. Wilding col. 6 lines 4–15. The microfluidic device 10 in FIG. 6A of Wilding is shown in perspective view in FIG. 1 of Wilding. The significant differences between Applicants' device and that of Wilding can be best seen by contrasting Wilding's FIG. 1 with Applicants' FIG. 3B and Wilding's FIG. 6A with Applicants' FIG. 3A.

As can be seen by referring to FIG. 6A of Wilding, detection region 117 is, as indicated by the Examiner, orthogonal to the channel extending between structures 56 and 58. However, detection region 117 is not oriented substantially orthogonal to the plane of the body structure of the device as required by Applicants' claim 1. The body structure of the Wilding device, like that of Applicant's device, is oriented relating to the plane defined by the x-axis and the z-axis. Wilding's detection region 117 is oriented parallel to, **not** orthogonal to, this plane.

Thus, Wilding does not teach every aspect of the claimed invention either explicitly or impliedly, nor does it show the identical invention claimed by Applicants in as complete detail as is contained in independent claim 1. Withdrawal of the rejection of claim 1 under U.S.C. § 102(b) as being anticipated by Wilding is, therefore, respectfully requested.

Because the other independent claim allegedly anticipated by Wilding, claim 32, also requires that there be a "detection channel segment" oriented substantially orthogonal to the plane of the body structure, Wilding cannot anticipate that claim either. Claims 2, 3, 5, and 6 depend from claim 1, and claims 33–36 depend from claim 32. Those dependent claims are by definition narrower than claims 1 and 32 and, as such, must be allowable over Wilding if Wilding does not anticipate claims 1 and 32. Accordingly, Applicants respectfully assert that Wilding does not anticipate any of claims 1–3, 5, 6, and 32–36.

II. Rejections Under 35 U.S.C. §103

Claims 7–14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Wilding. To warrant rejection under 35 U.S.C. § 103(a), all the claim limitations must be taught or suggested by the prior art. See MPEP § 2142. As demonstrated above, the Wilding reference neither teaches nor suggests all of the limitations of Applicants' claim 1. Thus, claim 1 is nonobvious. Claims 7–14 depend directly from independent claim 1. Any claim depending from a nonobvious claim is also nonobvious. See MPEP § 2143.03 and *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Therefore, dependent claims 7–14 are nonobvious. Withdrawal of the rejections of these claims as being unpatentable over Wilding is, therefore, respectfully requested.

III. Other rejections

Independent claims 15 and 21, as well as dependent claims 16–20, are indicated on the "Office Action Summary" as being rejected. However, no explanation is given within the Office action for these rejections. As demonstrated above, Wilding does not teach a detection channel segment "being disposed in a second plane that is substantially orthogonal to the first plane" (Applicants' claim 15) or "being disposed substantially orthogonally to the major plane of the body structure" (Applicants' claim 21). Therefore, Applicants respectfully assert that these claims are neither anticipated by nor unpatentable over Wilding. Withdrawal of the rejections of these claims is, therefore, respectfully requested. As claims 16–20 depend from an allowable claim, withdrawal of the rejections of these claims is also respectfully requested.

IV. Allowable subject matter

Claim 4 was objected to as being dependent upon a rejected base claim but was deemed allowable if rewritten in independent form to include limitations of the base claim and any intervening claims. Claim 4 depends directly from claim 1, which has been demonstrated above to be allowable. Therefore, claim 4 is allowable as originally presented.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants believe that the present application is in condition for allowance and action toward that end is respectfully requested. If the Examiner believes that a telephone interview would expedite the examination of this application, the Examiner is requested to contact the undersigned at the telephone number below.

Respectfully submitted,

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Signed: _____